National Institute of Environmental Health Sciences

Influence of weather on daily symptoms of pain and fatigue in female patients with fibromyalgia: A multilevel regression analysis

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Abstract:

OBJECTIVE: Although patients with fibromyalgia often report that specific weather conditions aggravate their symptoms, empirical studies have not conclusively demonstrated such a relationship. Our aim was to examine the association between weather conditions and daily symptoms of pain and fatigue in fibromyalgia, and to identify patient characteristics explaining individual differences in weather sensitivity. METHODS: Female patients with fibromyalgia (n Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 333, mean age 47.0 years, mean time since diagnosis 3.5 years) completed questions on pain and fatigue on 28 consecutive days. Daily weather conditions, including air temperature, sunshine duration, precipitation, atmospheric pressure, and relative humidity, were obtained from the Royal Netherlands Meteorological Institute. Multilevel regression analysis was applied. RESULTS: In 5 (10%) of 50 analyses, weather variables showed a significant but small effect on either pain or fatigue. In 10 analyses (20%), significant, small differences between patients were observed in the random effects of the weather variables, suggesting that symptoms of patients were, to a small extent, differentially affected by some weather conditions, for example, high pain with either low or high atmospheric pressure. These individual differences were explained neither by demographic, functional, or mental patient characteristics, nor by season or weather variation during the assessment period. CONCLUSION: There is more evidence against than in support of a uniform influence of weather on daily pain and fatigue in female patients with fibromyalgia. Although individuals appear to be differentially sensitive to certain weather conditions, there is no indication that specific patient characteristics play a role in weather sensitivity.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Meteorological Factors, Precipitation, Solar Radiation, Temperature

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Netherlands

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Other Health Impact

Other Health Impact: pain and fatigue among fibromyalgia patients

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified